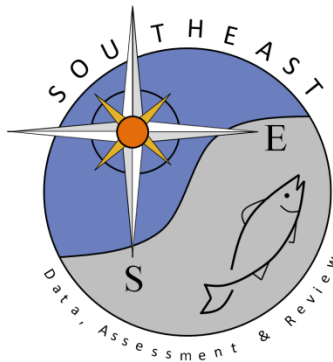


Discard length compositions for South Atlantic Black Sea Bass
(*Centropristis striata*) from the recreational fishery from Hatteras,
North Carolina to Florida

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SEDAR108-DW-04

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Introduction

From surveys that estimate recreational landings (e.g. MRIP, SRHS) detailed information on harvested catch, including species composition, number, and size are collected during dockside intercepts. However, for discarded catch only self-reported information about species composition and abundance is available. No information about the size composition of the discards is available from these dockside surveys. In the South Atlantic, there are multiple projects that now collect detailed information on discarded fish. This document provides summaries of the data collected at-sea for discarded Black Sea Bass (*Centropristis striata*) and the associated recreational discard length compositions.

Sampling Programs

Descriptions are provided below for the programs that provided recreational lengths from discarded Black Sea Bass for SEDAR 108 (Table 1).

Headboat At-Sea Sampling

In 2005, at-sea observer sampling began in North Carolina (NC), South Carolina (SC), Georgia (GA), and Florida (FL) to allow biologists to board headboat vessels to collect data on discarded fish. The at-sea observer sampling is divided into six regions: NC, SC, GA, northeast FL (Nassau to Brevard County), southeast FL (Indian River to Dade County), and the FL Keys (Monroe County). Headboat vessels that participate in the at-sea observer program are randomly selected each month from each sample region. State biologists contact the operators from the selected headboats to schedule a trip. During the observed trip, the captain and mates make sure the biologist is able to observe the fish before it is either stored in the fish hold or released. Biologists are allowed to assist with de-hooking the fish but are not allowed to provide guidance on whether to harvest or discard the fish. The biologist records the species, disposition (e.g. harvest, discard), and length (fork length in mm) for each fish. In FL, the biologist also records the condition of the discarded fish and the depth at which the fish was caught (SEDAR 100-DW-11). The majority (n=90,863) of discard lengths for SEDAR 108 were from Black Sea Bass sampled at-sea from headboats (Tables 1 and 2). The headboat sampling at-sea is conducted

under multiple sampling program names including APAIS observer (NC-GA), FIN-OBS MRFSS Headboat (FL), and FWRI-OBS (FL).

Charter Boat At-Sea Sampling

In FL, at-sea charter sampling has occurred from 2013-2016 and 2022-2025 through the FWRI-OBS program (Table 1 in SEDAR 100-DW-11). For each FL region (e.g. NEFL, SEFL), a charter vessel is randomly selected each week and the biologist contacts the vessel to schedule a trip. If there are no trips available with space for the biologist, then another vessel is randomly selected for sampling. At-sea, the biologist follows the same protocols as the headboat at-sea sampling and records the species, disposition (e.g. harvest, discard), length (fork length in mm) and condition of the discarded fish. The depth at which the fish was caught is also recorded (SEDAR 100-DW-11). Lengths from 1,921 discarded Black Sea Bass were provided by FWC at-sea charter sampling for SEDAR 108 (Tables 1 and 2).

Charter at-sea sampling began in 2025 as a pilot study in SC and GA. The data were not submitted for SEDAR 108 because the data are considered preliminary and have not yet undergone QA/QC (Franco, pers comm).

Recreational Catch Cards

A pilot study was conducted in eight Atlantic states in 2025 testing a modified Marine Recreational Information Program (MRIP) Access Point Angler Intercept (APAIS) design where catch cards were distributed to private boat anglers at the onset of their trip. From NC-GA, APAIS samplers completed 147 site assignments where they distributed catch cards. Of the 971 catch cards that were distributed, 184 were returned. The majority of the returned catch cards were returned directly to the APAIS samplers when the angler returned to the dock. Sampling occurred from May-Nov in NC and SC and from May-Dec in GA. The catch cards collected information on the number of fish that were discarded, by species, and the depth where the fish were caught. For managed species with bag and/or size limits lengths (to the nearest quarter inch) were requested for the first 20 discarded fish. No information from harvested fish is recorded on the catch cards. For SEDAR 108, 38 private mode lengths from discarded Black Sea Bass were provided from catch cards (SEDAR 108-RD-01).

Fleet Structure

Three recreational fleets, Headboat (HB), Gen Rec Inshore (GRI), and Gen Rec Offshore (GRO) are defined for SEDAR 108. The HB fleet consists only of removals from the headboat mode. The GRI fleet includes all shore mode removals and removals from the private and charter modes that occur in waters ≤ 3 miles from shore. The GRO fleet consists of removals from the private and charter modes in waters > 3 miles from shore. This differs from previous Black Sea Bass assessments (e.g. SEDAR 56, SEDAR 76) where only two recreational fleets were defined with all shore, private, and charter removals combined into a single Gen Rec fleet and a separate HB fleet (SEDAR 56-WP-05; SEDAR 76-WP-05).

Discard Length Compositions

A total of 92,822 discarded and 13,825 harvested Black Sea Bass were sampled across all fleets during at-sea data collections. The majority (n=90,863) of discard lengths for SEDAR 108 were sampled from the HB fleet. Sample sizes are insufficient for the GRI fleet (n=13) and discard length compositions were not provided for this fleet (Table 3).

There is a difference in the length distributions between harvested and discarded Black Sea Bass. Generally, discarded Black Sea Bass are smaller than Black Sea Bass that were harvested for both the HB (Figure 1) and GRO (Figure 2) fleets. The majority of discarded Black Sea Bass were less than 12 inches total length (TL).

To ensure confidentiality, headboat data from GA are combined with FL. For the HB fleet, the highest numbers of discard length samples were collected from NC, followed by GAFL and then SC (Table 4). For most years, the length distributions of discarded Black Sea Bass in GAFL are larger than those sampled in NC and SC (Fig. 3). For the GRO fleet, 2025 is the only year with lengths sampled outside of FL (Table 4) with discarded Black Sea Bass lengths being measured in NC (n=9) and SC (n=18). Similar to the HB fleet, the lengths of fish sampled from NC and SC for the GRO fleet have smaller length distributions than fish sampled from FL (Figure 4). However, it is not clear if this is indicative of a true trend or an artifact of low sample sizes.

Nominal discard length compositions were provided for both the HB and GRO fleets. The nominal length distributions of the GRO fleet with and without the catch card data are very similar (Figure 5). For the GRO fleet, nominal discard length compositions were calculated using all of the available data in 2025 (FL charter at-sea, NC-SC catch cards) and using only the FL charter at-sea data. Generally, the nominal length distribution from the GRO (including catch cards) fleet skews larger than the nominal length distribution from the HB fleet (Figure 6).

Weighted discard length compositions were only provided for the headboat fleet. Sample weights based on headboat trip duration were used to weight nominal headboat discard length compositions. Headboat trips were assigned to one of four categories based on trip duration: half-day (< 6 hours), three-quarter day (6-8 hours), full day (9-24 hours), and multi-day trips (> 24 hours; SEDAR 90-DW-20). The sampling weights were calculated as

$$W_t = \frac{\frac{N_t}{N}}{\frac{n_t}{n}}$$

where N is the number of headboat logbook trips reported, t is trip type, and n is the number of headboat trips sampled at-sea. Sample weights < 1 would down-weight a sample to account for oversampling while sample weights > 1 up-weighted the sample to account for undersampling (SEDAR 100-DW-11). Sample weights for SEDAR 108 are shown in Table 5. Annual weighted discard length compositions for a fish in length bin x is calculated as

$$bin_x = \frac{\sum L_H * W_H + \sum L_Q * W_Q + \sum L_F * W_F + \sum L_M * W_M}{\sum_{bin=1}^n [\sum L_H * W_H + \sum L_Q * W_Q + \sum L_F * W_F + \sum L_M * W_M]}$$

where L is the number of fish in bin, W is the sampling weight, H is half-day trips, Q is three quarter day trips, F is full day trips, and M is multiday trips.

For SEDAR 108, no discarded Black Sea Bass were sampled from multiday (M) trips. There are differences in the nominal discard length distributions of Black Sea Bass sampled from different headboat trip categories. The length distribution of Black Sea Bass discarded from full-day (F) trips generally skews larger than the discard length distributions of Black Sea Bass sampled from half-day (H) and three-quarter day (Q) trips (Figure 7). Weighting had minimal impacts and the nominal and weighted HB discard length compositions are similar (Figure 8).

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Tables

Table 1: Number of fish (nfish) and trips (ntrip) where discarded and harvested Black Sea Bass were sampled at-sea for length by each data source.

Sampling Program	Discard		Harvest	
	nfish	ntrip	nfish	ntrip
APAIS Observer	66,575	1,420	8,014	1,013
FIN-OBS MRFSS HEADBOAT	13,171	265	3,913	230
FWRI-OBS	13,038	626	1,898	299
RTC Release Catch Card	38	5	0	0

Table 2: Annual number of **discarded** Black Sea Bass sampled at-sea for length by each data source.

Year	APAIS Observer	FIN-OBS MRFSS HEADBOAT	FWRI-OBS	RTC Release Catch Card
2005	1,916	828	0	0
2006	2,845	959	0	0
2007	3,818	1,362	0	0
2008	2,904	1,742	0	0
2009	4,013	2,276	0	0
2010	5,023	6,004	0	0
2011	5,782	0	3,403	0
2012	6,823	0	1,985	0
2013	3,787	0	2,237	0
2014	4,808	0	2,248	0
2015	5,581	0	1,057	0
2016	5,227	0	359	0
2017	4,214	0	257	0
2018	2,685	0	377	0
2019	1,674	0	130	0
2020	1,019	0	239	0
2021	273	0	116	0
2022	1,887	0	187	0
2023	894	0	59	0
2024	535	0	105	0
2025	867	0	279	38

Table 3: Annual number of discarded and harvested Black Sea Bass sampled at-sea for length from the Headboat (HB), Gen Rec Inshore (GRI), and Gen Rec Offshore (GRO) fleets.

Year	Discard						Harvest					
	Number of Fish			Number of Trips			Number of Fish			Number of Trips		
	HB	GRI	GRO	HB	GRI	GRO	HB	GRI	GRO	HB	GRI	GRO
2005	2,744	0	0	141	0	0	1,710	0	0	142	0	0
2006	3,804	0	0	128	0	0	1,617	0	0	131	0	0
2007	5,180	0	0	138	0	0	933	0	0	106	0	0
2008	4,646	0	0	132	0	0	511	0	0	89	0	0
2009	6,289	0	0	122	0	0	802	0	0	95	0	0
2010	11,027	0	0	145	0	0	2,521	0	0	128	0	0
2011	9,185	0	0	144	0	0	1,006	0	0	83	0	0
2012	8,808	0	0	156	0	0	643	0	0	63	0	0
2013	5,240	2	782	122	1	34	556	1	145	56	1	26
2014	6,427	0	629	125	0	32	657	0	160	78	0	27
2015	6,383	0	255	113	0	18	512	0	80	64	0	14
2016	5,586	0	0	113	0	0	491	0	0	83	0	0
2017	4,471	0	0	119	0	0	421	0	0	79	0	0
2018	3,062	0	0	104	0	0	269	0	0	66	0	0
2019	1,804	0	0	92	0	0	131	0	0	50	0	0
2020	1,258	0	0	36	0	0	188	0	0	28	0	0
2021	370	0	19	41	0	1	33	0	3	13	0	1
2022	2,074	0	0	90	0	0	122	0	0	42	0	0
2023	950	0	3	63	0	2	106	0	1	29	0	1
2024	606	0	34	54	0	11	45	0	2	23	0	1

	Discard						Harvest					
	Number of Fish			Number of Trips			Number of Fish			Number of Trips		
	HB	GRI	GRO	HB	GRI	GRO	HB	GRI	GRO	HB	GRI	GRO
2025	949	11	224	51	3	17	106	0	53	37	0	11

Table 4. Number of **discarded** Black Sea Bass and associated trips sampled for length at-sea from the Headboat (HB), Gen Rec Inshore (GRI), and Gen Rec Offshore (GRO) fleets from each state. No fish from the GRI fleet were sampled in NC.

	Number of Fish									Number of Trips								
	HB			GRI		GRO			HB			GRI		GRO				
Year	NC	SC	GAFL	SC	GAFL	NC	SC	GAFL	NC	SC	GAFL	SC	GAFL	NC	SC	GAFL		
2005	1,308	563	873	0	0	0	0	0	64	37	40	0	0	0	0	0		
2006	1,819	784	1,201	0	0	0	0	0	56	35	37	0	0	0	0	0		
2007	2,638	1,080	1,462	0	0	0	0	0	55	38	45	0	0	0	0	0		
2008	1,902	952	1,792	0	0	0	0	0	44	30	58	0	0	0	0	0		
2009	2,466	1,404	2,419	0	0	0	0	0	40	33	49	0	0	0	0	0		
2010	4,070	923	6,034	0	0	0	0	0	62	25	58	0	0	0	0	0		
2011	4,621	1,012	3,552	0	0	0	0	0	62	22	60	0	0	0	0	0		
2012	5,232	1,068	2,508	0	0	0	0	0	63	31	62	0	0	0	0	0		
2013	2,758	399	2,083	0	2	0	0	782	35	30	57	0	1	0	0	34		
2014	2,987	938	2,502	0	0	0	0	629	30	33	62	0	0	0	0	32		
2015	4,114	781	1,488	0	0	0	0	255	36	22	55	0	0	0	0	18		
2016	3,638	925	1,023	0	0	0	0	0	48	25	40	0	0	0	0	0		
2017	2,757	946	768	0	0	0	0	0	49	28	42	0	0	0	0	0		
2018	1,914	528	620	0	0	0	0	0	38	24	42	0	0	0	0	0		
2019	1,081	516	207	0	0	0	0	0	46	22	24	0	0	0	0	0		
2020	814	164	280	0	0	0	0	0	23	9	4	0	0	0	0	0		
2021	254	19	97	0	0	0	0	19	16	3	22	0	0	0	0	1		
2022	1,418	469	187	0	0	0	0	0	31	18	41	0	0	0	0	0		
2023	686	208	56	0	0	0	0	3	24	11	28	0	0	0	0	2		
2024	256	279	71	0	0	0	0	34	17	12	25	0	0	0	0	11		

	Number of Fish									Number of Trips								
	HB			GRI			GRO			HB			GRI			GRO		
Year	NC	SC	GAFL	SC	GAFL	NC	SC	GAFL	NC	SC	GAFL	SC	GAFL	NC	SC	GAFL		
2025	684	183	82	11	0	9	18	197	23	8	20	3	0	1	1	15		

Table 5. Sample weights for half (h), three quarter (Q), full (F), and multi (M) day headboat trips.

Year	H	Q	F	M
2005	1.010	0.328	1.460	0.798
2006	0.969	0.282	1.749	0.080
2007	0.894	0.373	2.201	0.049
2008	1.045	0.517	1.164	
2009	0.983	0.304	2.473	
2010	1.039	0.351	1.445	
2011	1.134	0.362	1.340	
2012	1.311	0.358	0.780	
2013	1.150	0.571	0.835	
2014	1.021	0.713	1.151	
2015	1.054	0.634	1.085	
2016	1.088	0.773	0.791	
2017	1.024	0.731	1.155	0.932
2018	1.012	0.790	1.134	1.219
2019	1.046	0.865	0.919	1.021
2020	0.901	0.789	2.200	
2021	0.959	1.060	1.121	
2022	0.942	1.190	1.144	0.725
2023	1.028	1.399	0.747	1.062
2024	0.800	0.835	2.088	0.556
2025	1.071	0.787	0.930	0.231

Figures

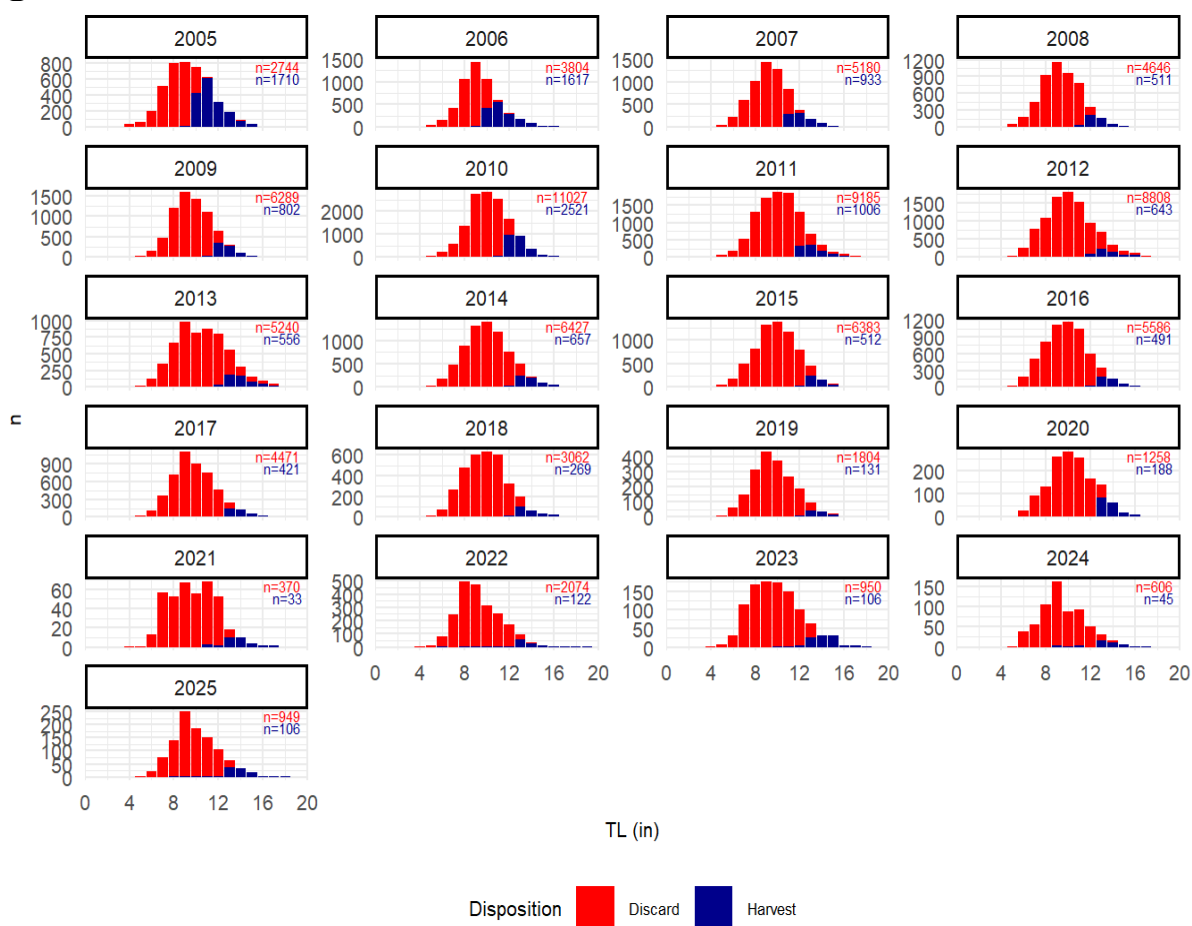


Figure 1. Comparison of lengths from harvested and discarded Black Sea Bass sampled at-sea from the **HB** fleet.

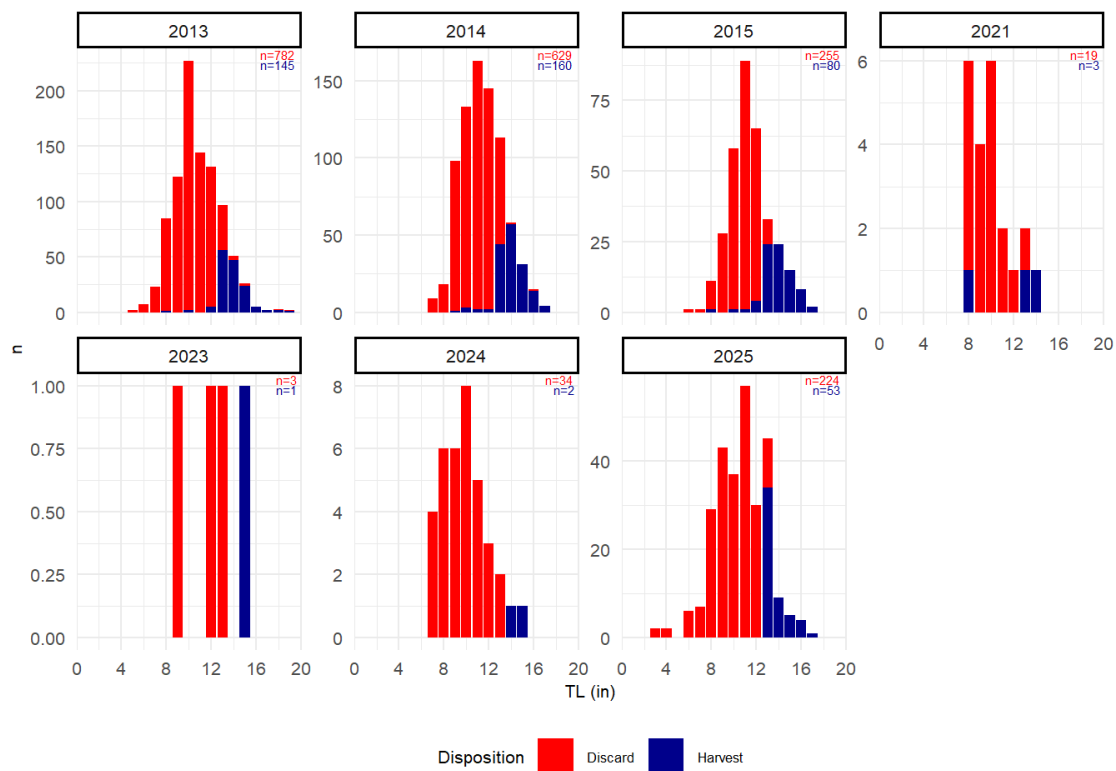


Figure 2. Comparison of lengths from harvested and discarded Black Sea Bass sampled at-sea from the **GRO** fleet.

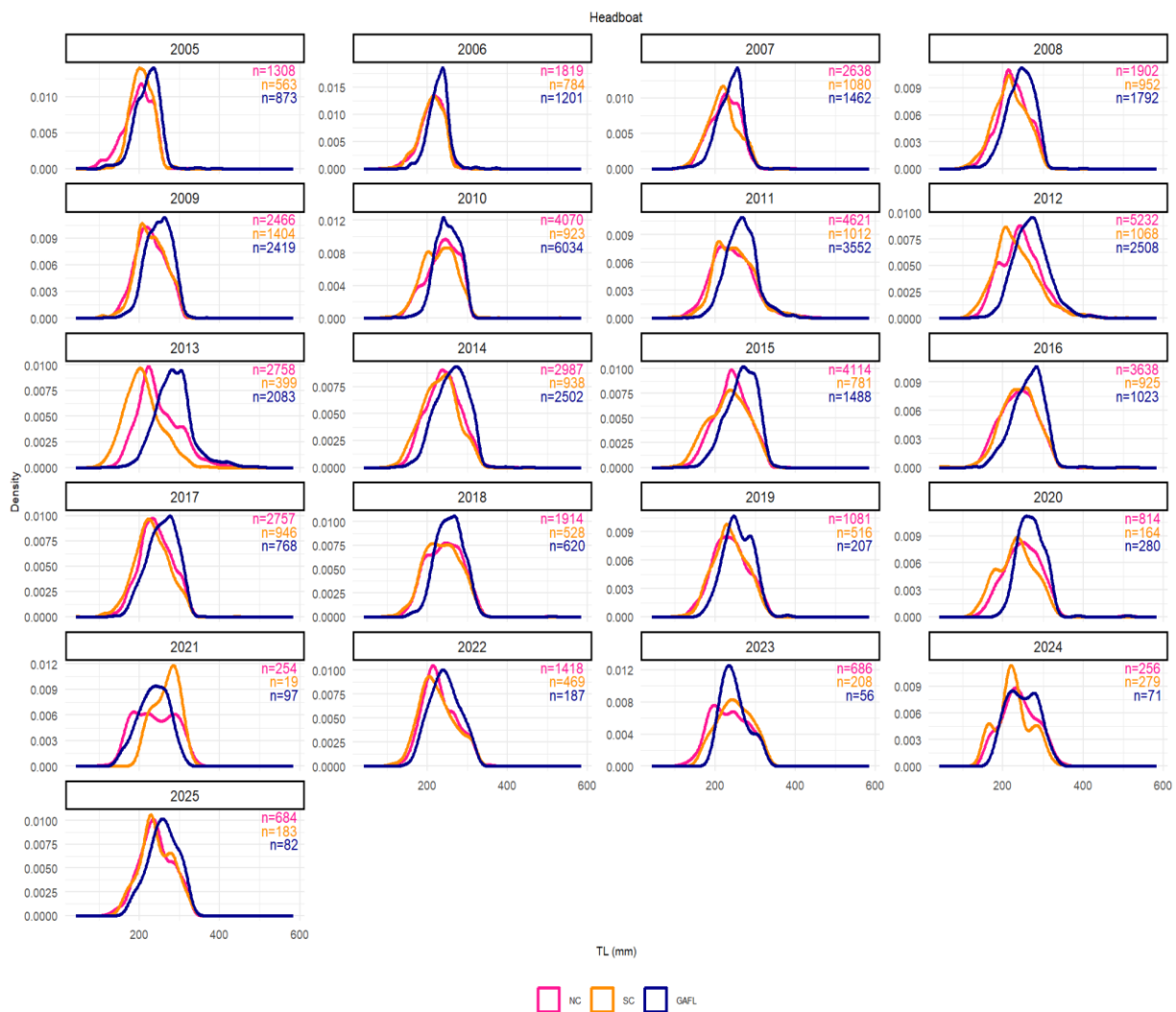


Figure 3. Nominal discard length distribution by state for Black Sea Bass sampled at-sea from the **HB** fleet.

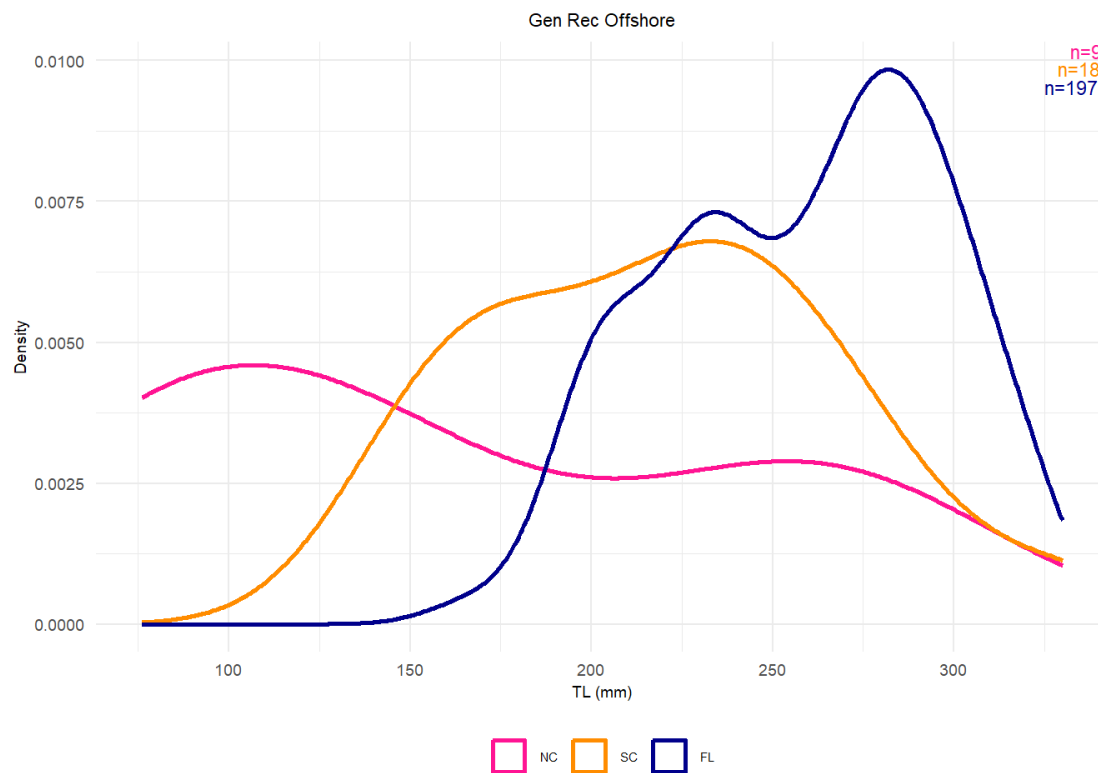


Figure 4. Nominal discard length distribution by state for Black Sea Bass sampled at-sea from the **GRO** fleet.

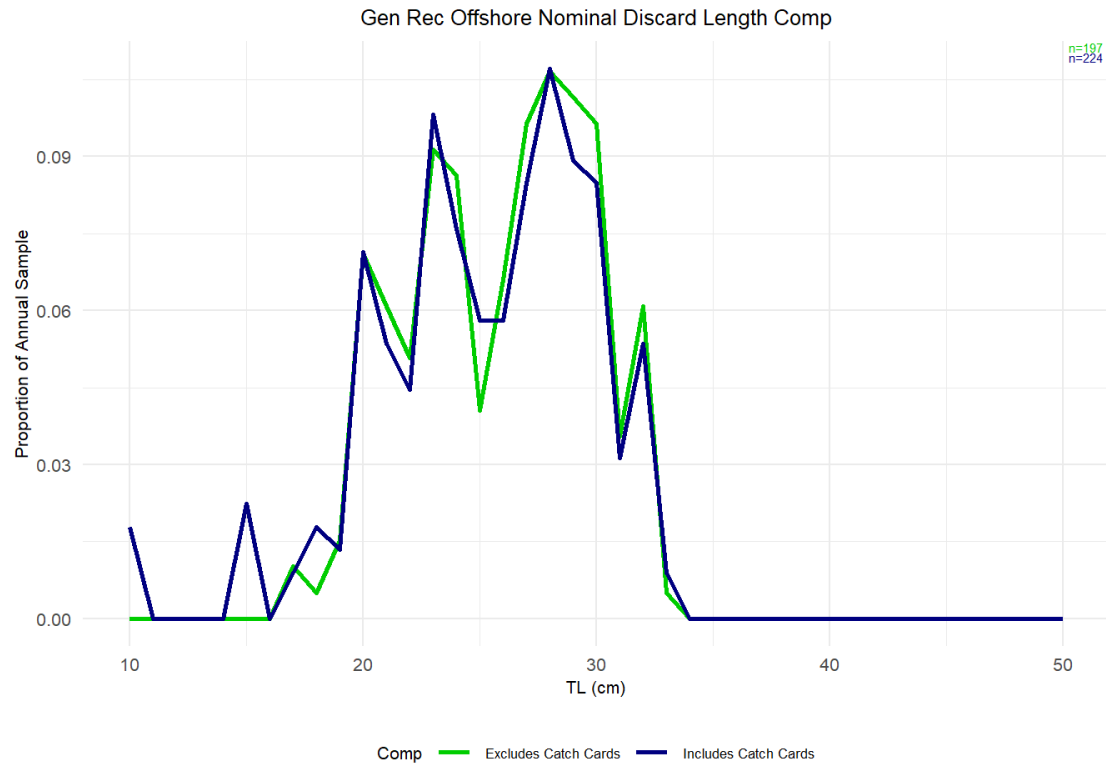


Figure 5. Nominal length distributions for Black Sea Bass sampled at-sea from the **GRO** fleet. Samples from the Recreational Catch Card program are included in the blue line and excluded in the green line.

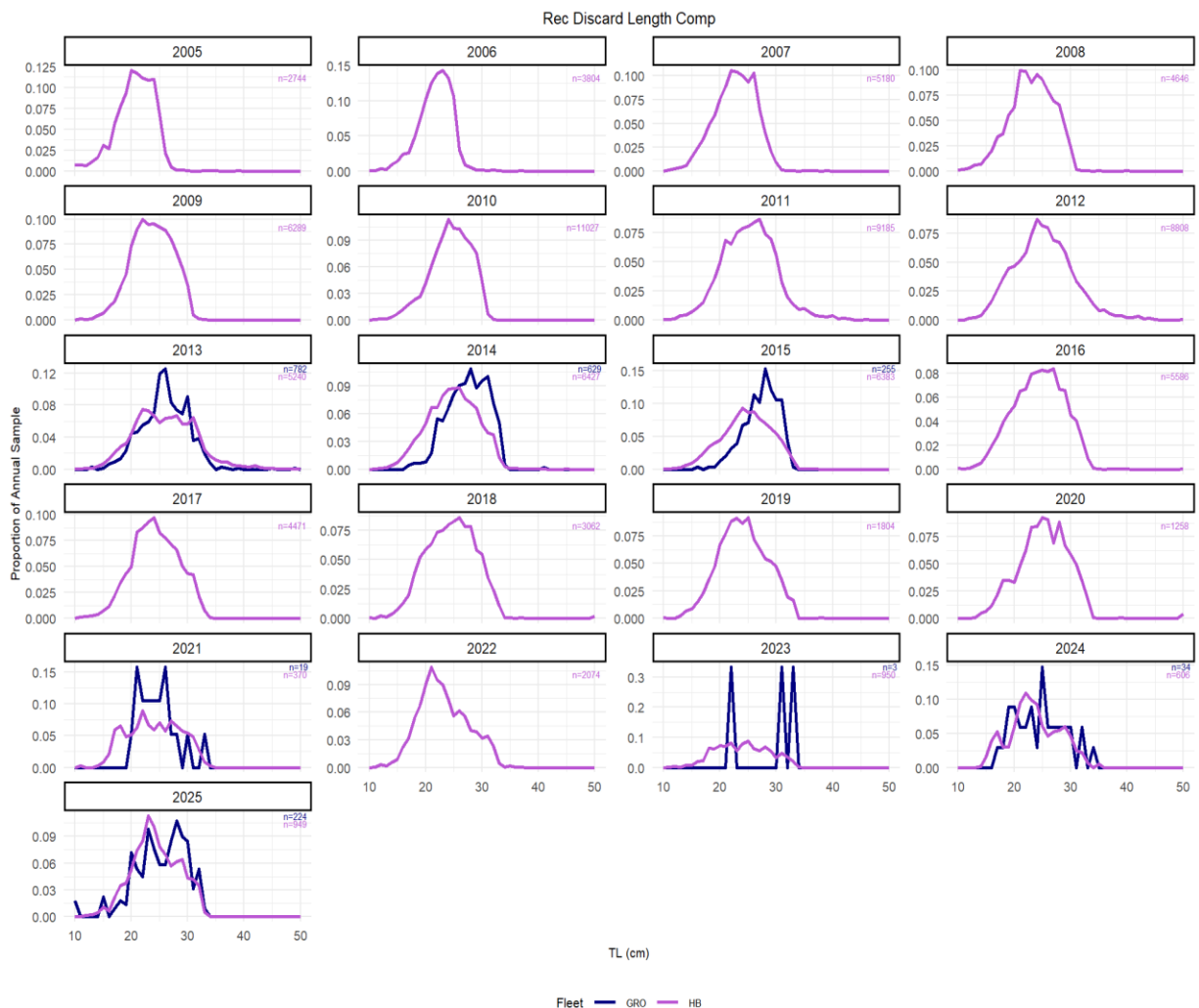


Figure 6. Nominal discard length compositions from Black Sea Bass sampled at-sea from the headboat (HB) and Gen Rec Offshore (GRO) fleets. Black Sea Bass lengths from the Recreational Catch Card program are included in the GRO compositions.

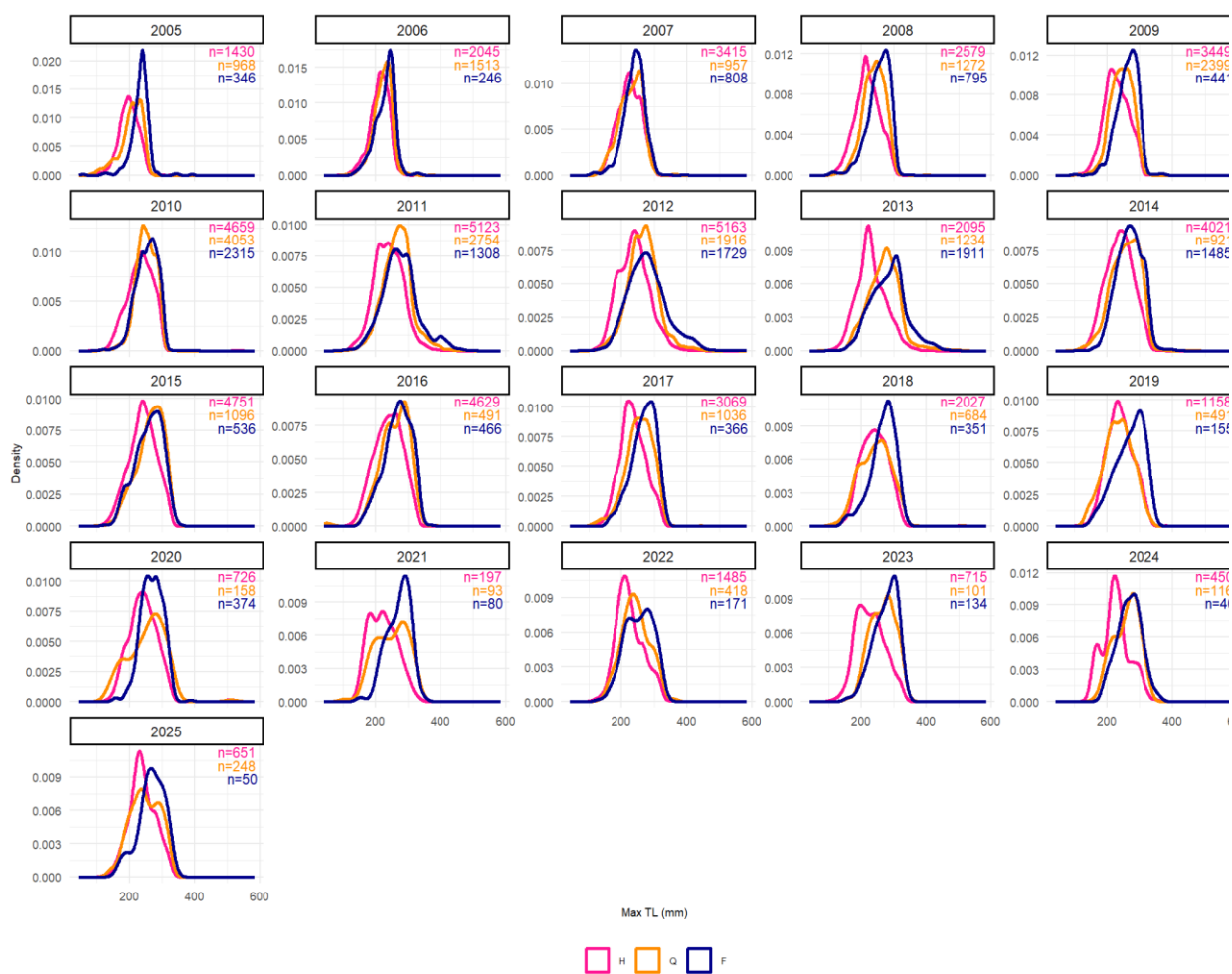


Figure 7. Nominal length distribution of Black Sea Bass sampled at-sea from half (H), three-quarter (Q), and full (F) day **headboat** trips. No Black Sea Bass were sampled from multi-day headboat trips.

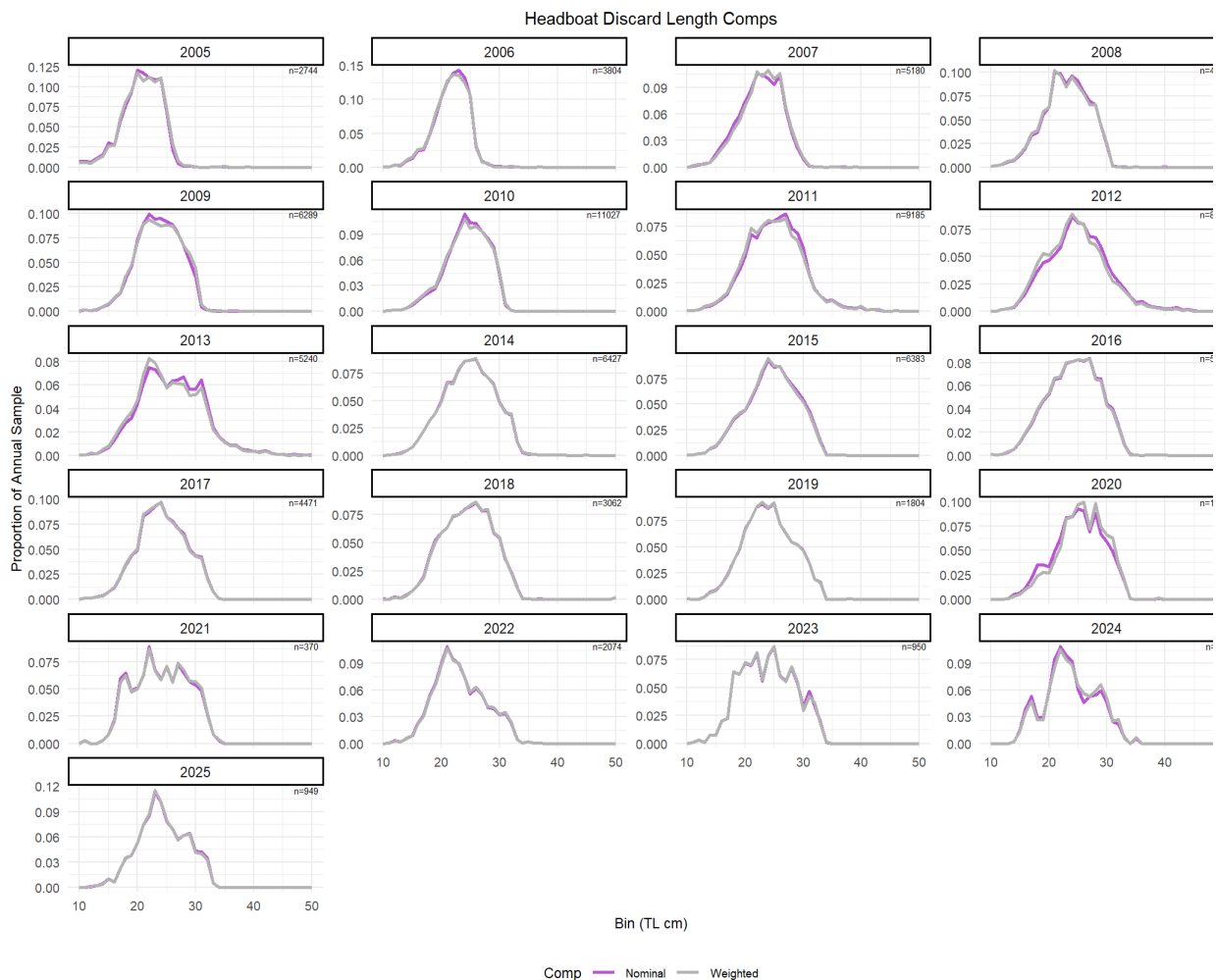


Figure 8. Nominal and weighted length distributions of Black Sea Bass sampled at-sea from the **HB** fleet.